



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,876	06/29/2006	Anthony Bonnet	FR-AM2003 NP	7921
31684	7590	03/06/2009		
ARKEMA INC. PATENT DEPARTMENT - 26TH FLOOR 2000 MARKET STREET PHILADELPHIA, PA 19103-3222				
EXAMINER				
PAUL, JESSICA MARIE				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
03/06/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/584,876

**Applicant(s)**

BONNET ET AL.

**Examiner**

Jessica Paul

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-08)  
Paper No(s)/Mail Date 6/29/06 and 11/24/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election without traverse of claims 1-13 in the reply filed on December 18, 2008 is acknowledged. Claims 14-20, 24-29, 32-34, 37, and 38 have been withdrawn by the applicants.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims, 1, 3, and 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The applicant claims "a compound that can be grafted," and "a graftable compound." When using "-able" terminology, it is unclear whether the compounds are or aren't grafted; since the compound only needs to be "capable" or grafting. It is not possible to tell when, using "-able" terminology, the claim is being infringed upon; i.e. exactly when the compound is "-able" to be grafted by the claimed method, and when it is not.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim reads "a graftable metal salt represented by one of

the following formulae:  $(\text{CH}_2=\text{CH}-\text{COO}^-)_n\text{M}^{n+}$ ;  $(\text{CH}_2=\text{C}(\text{CH}_3)-\text{COO}^-)_n\text{M}^{n+}$ ; or  $(\text{CH}_2=\text{CH}-\text{Q}-\text{COO}^-)_n\text{M}^{n+}$ ; where Q denotes an optionally substituted, linear or cyclic, aliphatic or optionally substituted aromatic group and M denotes a metal cation of valence n, which may be chosen from  $\text{Ca}^{2+}$ ,  $\text{Na}^+$ , and  $\text{Zn}^{2+}$ ." Since there are two "n" variables in the equation, the examiner is unclear to which the applicants are referring. Also, the subscripted "n" of the equation is not defined. For purpose of further prosecution, the examiner takes the position that the subscripted "n" is intended to read 1 or 2.

Claim 7 recites the limitation "the graftable metal salt is zinc undecylenate" in claim 6. There is insufficient antecedent basis for this limitation in the claim. Zinc undecylenate does not read on the formulae set forth by the applicant in claim 6.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Murphy (US Patent No. 5409997).

Regarding claims 1 and 2; Murphy discloses a method for grafting a coagent [stabilizer] onto a fluoropolymer. The composition may be dry blended prior to melt processing by means well known in the art. The fluoropolymer components may be

Produced by conventional means which are well known in the art. The coagent is added to the fluoropolymer via dry blended. Once the composition is blended, it may be readily melt processed [melt blending] into a shaped article [forming], such as a sheet or film. The composition may also be exposed to ionizing radiation to affect crosslinking [subjecting], 11-15 Mrad beta or gamma irradiation (col4, line30-col5, line54).

Regarding claim 3, 5, and 6; Murphy discloses preferred coagents are metallic diacrylates, especially, zinc dimethacrylate or zinc diacrylate (col3, line31-36).

Regarding claims 3 and 9; Murphy teaches that various additives may also be added to the composition, such as antioxidants, for example alkylated phenols and alkylidene polyphenols (col3,line65-col4, line15).

Regarding claim 8; Murphy discloses preferred examples containing 98 weight % of the fluoropolymer and 2 weight % of SARET® 634 [graftable metal salt, zinc dimethacrylate] (col5, line59-col6, line48, tl), which falls within the claimed range as required by the applicant.

Regarding claims 12 and 13; Murphy teaches polyvinylidene fluoride (PVDF) may optionally be included in the fluoropolymer composition; wherein PVDF is listed as a homopolymer (100% VDF monomers) (col4, line13-15), and therefore reads on applicants required at least 85% VDF monomers by weight.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy (US Patent No. 5409997).

Murphy discloses the basic claimed method for the radiation grafting onto a fluoropolymer [with respect to claim 1]. Murphy fails to disclose the antioxidant blended into the fluoropolymer after irradiation. Although the prior art does not explicitly teach the addition of the antioxidant after irradiation, as required by the applicant, the courts have upheld that process steps taken concurrently are the equivalent of steps taken successively. See *Asbestos Shingle, Slate & Sheathing Co et al vs. Rock Fiber Mfg. Co.*, 217 F. 66.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy (US Patent No. 5409997) as applied to claims 1-3, 5-9 and 12 above, and further in view of Cheng et al. (US Patent No. 4935467).

Regarding claims 10 and 11; Murphy discloses the basic claimed method for the radiation grafting onto a fluoropolymer [with respect to claim 1]. Murphy fails to disclose the specified antioxidant in the preferred range.

Cheng et al. discloses a composition comprising a blend of a thermoplastic polymer (vinylidene fluoride polymer), a thermoplastic elastomer, and various additives including antioxidants such as Irganox 1010, 1035, and 1076 (abs, col4, line17-35). The amount of additives used in the preferred examples is 0.1% by weight (col11, line1, tIV). Cheng et al. and Murphy are combinable because they are both concerned with the same field of endeavor, namely graftable fluoropolymers and methods of making. At the time of the invention, a person having ordinary skill in the art would have found it obvious to substitute the antioxidants as taught by Murphy, with the Irganox antioxidants as taught by Cheng et al. and would have been motivated to do so in order to produce a composition having extended pot life.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Paul whose telephone number is (571)270-5453. The examiner can normally be reached on Monday thru Friday 8:00- 6:00p; alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sanza L McClendon/  
Primary Examiner,  
Art Unit 1796

Jessica Paul  
Examiner  
Art Unit 1796

/JMP/